

**The School District of Philadelphia
Germantown High School
Promise Academy Lesson Plan**

Week of:	10/10/11	Week 6			
Name:	Brian Rost				
Class:	Algebra 1	1 st , 11 th			
	Monday	Tuesday	Wednesday	Thursday	Friday
Notes/Concerns:	· I would like to teach my students how to Microsoft Excel to perform the Portfolio Activities in Holt.	· I want my students to become accustomed to using multiple forms of numbers in preparation for future chapters.	· I want to refresh my students knowledge of Prime & Composite Numbers, GCF & LCM.	Schedule a Test for Wednesday Oct 19 th .	· Still waiting for graphing calculators; it is important that we get these soon!!
Objective (Must be measurable) (Purpose)- The purpose of the lesson and why it is important for the students to learn. Objective(s) should be at the mastery level and aligned with Eligible Content. <i>Does my objective tell the "what" and "why" and is it at the mastery level? Did I utilize Eligible Content?</i> Reminder: Clearly communicate and Introduce the Objectives to Students.	· SWBAT use Mental Math Properties to simplify expressions.	· SWBAT use Mental Math to solve a variety of problems that include fractions, integers, and decimals.	· SWBAT use the factoring tree and Venn-Diagram to solve a Distributive Problems using numbers.	· SWBAT model multiplication with Algebraic Tiles. · SWBAT express the power of a number by the multiplication of that number by itself a power number of times, that is, $3^4 = 3 \cdot 3 \cdot 3 \cdot 3$ · SWBAT multiply and divide expressions.	· SWBAT achieve an 80% or better mastery on the 2 nd half chapter quiz. · SWBAT solve word problems; write the necessary expressions; use Mental Math to simply and solve the problems.
Preview the Lesson (DO NOW/Jump Start) Anticipatory Set (Focus)- A short activity or prompt that focuses the students' attention before the actual lesson begins.	Rewrite the following as a product of a number and the sum of two numbers: 8(17), 19(7), 20(123)	Rewrite the following as a product of a number and the difference of two numbers: 8(17), 19(7) 6(16)	What is the greatest common factor (GCF) & lowest common multiple (LCM) for 10 & 15?	Draw a large square with 5 smaller squares across the top; how many of the smaller squares comprise the larger square. Provide graph paper.	Solve in the lowest terms: $(\frac{1}{3} + \frac{5}{7})x$

Standards/Eligible Content (Refer to PST/CTE Guidelines)	·Numbers, # Systems & Relationships 2.1.A ·Computation & Estimation 2.2.A1.C ·Mathematical Communication 2.5.8.B.	·Represent Numbers in Equivalent Forms 2.1.8.B., ·Computation and Estimation 2.2.8.B. ·Mathematical Communication 2.5.8.B.	·Number Theory 2.1.8.E ·Concepts & Applications of Operations 2.1.8.F. ·Computation & Estimation 2.2.A1.C ·Mathematical Communication 2.5.8.B.	·Place Value 2.1.A1.D ·Mathematical Communication 2.5.8.B.	·Mathematical Problem Solving & Communication 2.5.A1.
(Direct Instruction/Explicit Teaching) The teacher will explicitly teach the vocabulary, skills, and concepts that are necessary for the students to meet the objective. Did I include explicit teaching steps for the vocabulary, skills and concepts? <i>Reminder: Did I include how I will model the skills, strategies and activities? Modeling (Show Me)- The teacher demonstrates the skills, strategies and activities for students related to the objective.</i>	·Introduce the concept of Mental Math as a process of organization that can be done prior to tackling a problem. For this lesson however I would like you to state the properties that you will be using to simplify. <i>Ask:</i> does order matter when adding to numbers together? <i>Discuss.</i> How about subtraction? Emphasize number order as important for subtraction, but not for addition and likewise multiplication. Introduce the Comm. & Assoc. Properties. <i>Compare & Contrast</i> them. <i>Ask:</i> How would you determine which property is which? Emphasize regrouping of numbers (54+39)+26; identify property. ·Introduce the Distributive Property; remember the Do Now -it's a form of the DP. Recreate the Table pg 83 and perform with students.	·Using the lesson materials from yesterday we will work problems that require addition, subtraction, multiplication and division (no fraction in division) with fractions, $\frac{a}{c} + \frac{b}{c} = \frac{(a+b)}{c}$ $\frac{a}{c} - \frac{b}{c} = \frac{(a-b)}{c}$ $\frac{a}{c} \cdot \left(\frac{b}{d}\right) = \frac{(ab)}{(cd)}$ integers (.....-2, -1, 0, +1, +2,... and decimals. I will reintroduce the concept of a closed system (<i>Closure pg 70</i>) among classifications as they will see it in the PSSA & SAT. ·I will refreshed the students knowledge of fractions, decimals (percents); converting them into each other. ·I will state the properties as I work problems.	·Review the GCF & LCM ·Review the Factoring Tree ·Review the Venn-Diagram as it applies to the GCF & LCM ·Preview why these concepts are important in reference to an expression in the form of $(15x^3y^5 + 10xy^2)$ th at we will be covering in the future.	·Create Algebraic Tile representation of powers (squaring) numbers. Ask: have we seen these before (i.e patterns) ·Introduce the x-size Algebraic Tile which has a height of 1 unit by an unknown quantity x. Compare it to the unit by unit (1 by 1) AT. ·Create AT forms of $2 \cdot 3x$ & $2x \cdot 3x$. Compare and Contrast them for the students. ·CRITICAL THINKING: Area of a box or rectangle. ·Exponents, Base, Power; how to say them. Identify the patterns. ·Use the Distributive Property with expressions. ·Dividing an Expression $\frac{(a+b)}{c} = \frac{a}{c} + \frac{b}{c}$ $\frac{(a-b)}{c} = \frac{a}{c} - \frac{b}{c}$	·Word Problems ·Read, underline units and circle mathematical words and statements. ·Rewrite & Organize the information. ·What are we trying to figure out? ·Do we need to do any conversions? ·What information is not provided that we might need? (formulas: area, perimeter, etc.) ·Translate word statements into operations. ·Write expressions and check. ·Use properties of mental math and solve. ·Check your answers.
Guided Practice (What teacher & student will do)	(54+39)+26 Original (39+54)+29 Com. Prop. 39+(54+26) Assoc. Prop. ·Pg. 86 Holt, Perform a	Copyrighted Material Worksheet (can not be transmitted electronically)	Teacher created problems using common two digit numbers 25 & 70; 21 & 81, etc. Create	Pg. 101 Holt, Guided Skills Practice, Perform a selection of problems.	More word problems selected from the textbook and workbooks.

together) (Follow Me)- The teacher leads the students in applying the skills and strategies. Multiple strategies are used to engage the students. This is where differentiation occurs. <i>Will these activities be effective in helping the students apply the skills and strategies?</i>	selection of problems 5-12. ·Pg. 87 Holt, Perform a Word Problem		factoring trees for a variety of numbers, create venn-Diagrams for two sets of numbers.		
Checking for understanding (Must be throughout the lesson) The teacher uses a variety of questioning strategies to determine if students have mastered the skills and if he/she should re-teach and/or enrich. <i>What kinds of questions will help me check for understanding?</i>	·Walk about the room during independent practice.	·Walk about the room during independent practice. ·As them to communicate what they are doing in mathematical terms.	Students will be creating Venn-Diagram projects in groups; I will asked random members questions about their projects. I want to communicate in mathematical language.	The x-size Algebraic Tile is confusing to most students. I will present a number of difference examples to support their understanding.	Make sure the students are underlining the correct words and statements.
Differentiation/ Accommodations Small group instruction objective	Have students rephrase the properties in their own words.	Use pictures to represent fractions, model fractions as geometric figures.	I will work with individual groups to support understanding.	I will have hand-held AT that they can count and manipulate; then draw it their notebooks.	I provided them with a worksheet to translate word statements into mathematical operations. Attached.
Independent Practice (What student do independently/Activity) The teacher releases students to practice the skills and/or demonstrate what they have learned. <i>Will</i>	Pg. 58 Holt, Practice & Apply a selection of problems.	Pg. 56 & 71 Holt, Practice & Apply a selection of problems.	Group Project with much larger 3 & 4 digit numbers. This project emphasize the importance of good written planning & organization skills.	Pg. 101-102 Holt, Practice & Apply #17-35 1 st Column.	More word problems selected from the textbook and workbooks.

<i>these independent activities be effective in helping the students apply the skills and strategies?</i>					
Closure- The teacher sums up the lesson and makes connections to the objective. Rigorous and relevant homework is assigned that allows students to practice the skill/strategy independently. <i>Does my closing activity check for understanding and relate to the objective?</i>	At the moment and in the near future we will need to use mental math as scratch work on the side of our papers, but in the future you will be able to do most of the preliminary work in your heads.	Fractions, decimals, percents will be apart of your lives and it is important to become proficient using them. Use apply them when purchase items, when you work and get paid, you may not think about it much, but mentally you doing calculations without even knowing it. I am giving you the rules.	These are many of the tools that you have learned in middle school that we will use in Algebra. You will find the Venn-Diagram a useful tool in other classes as well.	We have completed Chapter two lessons, we have accomplished much and over the next few days I want to use it in more applied applications.	Word problems and application are the reasons we do algebra. It is important that we understand what the questions are asking and what questions to ask ourselves. With practice you will become proficient and with all our new tools you will be able to solve more complex problems in the future.
Exit Ticket (PSSA Related Activity/Open ended-question)	How can you use AV in your- daily life?	Solve $(\frac{x}{3} + \frac{5x}{7})$	Decompose 64 into a product of 2's, how many are their and rewrite in exponentiation form?	What geometric figure represents a cubed number?	What is the difference between "is less than" and "less than"? Give Example.
HOMEWORK Is my homework rigorous and relevant?	Pg. 86-87 #14-21, ODD	Copyrighted Material Worksheet (can not be transmitted electronically)	Review Notes for Quiz	Pg. 101 #17-35 1 st Column	Review Notes
Assessment (s) (Must NOT take the entire period)					Quiz

Attachments:

- <http://rosta1g1.wikispaces.com/>

(Provide Documents as to cite evidence of preparation)